UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,820	01/27/2004	Vijay Bahel	0315-000555	8979

27572   7590   12/14/2006

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER
CRAIG, DWIN M

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/765,820	BAHEL ET AL.
	Examiner	Art Unit	
	Dwin M. Craig	2123	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>27 January 2004</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21 and 23-42</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-21 and 23-42</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>27 January 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>9/7/05, 7/15/05, 6/30/04</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-21 and 23-42 have been presented for examination. Claim 22 has been

canceled.

Specification

2.   Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2.1   The abstract contains the phrase *"said cooling system..."*

Correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3.   Claims 26-42 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to non-statutory subject matter. The claim language fails to teach a *useful concrete and tangible*

result as required by 35 U.S.C. 101. More specifically the current claim language fails to teach

an invention in any of the statutory categories of a *process, machine, manufacture or*

composition of matter and merely discloses the manipulation of a model. Manipulation of a

model and performing calculations is an example of manipulation of an abstract idea; see the

August 2006 revision of the MPEP section 2107.

Amendment is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002

do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA

35 U.S.C. 102(e)).

4.   Claims 1, 2, 3, 5, 6, 11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by

US Patent 6,701,725 Rossi.

4.1   Regarding independent claim 1, *Rossi* discloses, *a method of computer-based simulation*

of a cooling system (Figure 1 and the accompanying text and Col. 2 lines 13-24 and Col. 5 lines

16-36 *Rossi* is teaching modeling the performance of a cooling system which teaches the

functionality of a simulator), *comprising: inputting condenser parameters* (Figure 3 "Parameter

input" Col. 10 lines 27-67 and Col. 11 lines 1-20 and Col. 12 lines 34-41), *evaporator*

parameters (Figure 3 "Parameter input" and Col. 15 lines 48-51 and Col. 6 lines 43-44

"…assumptions about the evaporator are made…") *and compressor parameters for said cooling*

system (Figure 3 "Parameter input" and Col. 6 lines 55-67 and Col. 7 lines 1-45); *processing said*

condenser parameters, said evaporator parameters and said compressor parameters through a

model of said cooling system (Figure 1 and the accompanying text and Col. 5 lines 16-45), *and*

selecting a flow control device based on an output of said model (Figure 1 # 14 and Col. 4 lines

10-28 "expansion device" and Col. 4 lines 51-56 "reversing valve").

4.2   Regarding claim 2, *Rossi* discloses, *said flow control device includes one of a capillary*

tube device and an orifice device (Col. 4 line 14 "…capillary tube of fixed orifice…").

4.3   Regarding claim 3, *Rossi* discloses *comprising selecting a flow control parameter*

including a sub-cooling temperature and a superheat temperature (Col. 3 lines 43-57).

4.4   Regarding claim 5, *Rossi* discloses, *determining refrigerant mass flow rates* (Col. 10

lines 61-65).

4.5   Regarding claim 6, *Rossi* discloses, *wherein said properties include refrigerant charge*

and one of refrigerant superheat temperature and refrigerant sub-cooling temperature (Col. 5

lines 7-15 "refrigerant charge…" and Col. 2 lines 41-53"superheat").

4.6   Regarding claim 11, *Rossi* discloses *modeling tubing and heat transfer characteristics*

(Figure 1 and Col. 5 line 45-52see also Col. 5 lines 46-59).

4.7   Regarding claim 13, *Rossi* discloses *wherein said condenser parameters and said*

compressor parameters are input as air-cooled condensing unit parameters (Figure 1 # 12 and

Col. 3 lines 58-67 and Col. 4 lines 1-9 and Col. 5 lines 37-45).

5. Claims 15, 17, 18, 19, 20, 23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,701,725 Rossi.

5.1 Regarding Claim 15, *Rossi* discloses, *a method of computer-based simulation of a cooling system,* (Figure 1 and the accompanying text and Col. 2 lines 13-24 and Col. 5 lines 16-36 *Rossi* is teaching modeling the performance of a cooling system which teaches the functionality of a simulator) *comprising: inputting condensing unit parameters,* (Figure 3 "Parameter input" Col. 10 lines 27-67 and Col. 11 lines 1-20 and Col. 12 lines 34-41), *evaporator parameters* (Figure 3 "Parameter input" and Col. 15 lines 48-51 and Col. 6 lines 43-44 "...assumptions about the evaporator are made...") *and compressor parameters for said cooling system;* (Figure 3 "Parameter input" and Col. 6 lines 55-67 and Col. 7 lines 1-45), *inputting refrigerant properties for a refrigerant flowing through said cooling system;* (Col. 5 lines 62-67 and Col. 6 lines 1-21) *processing said condensing unit parameters, said evaporator parameters and said compressor parameters through a model of said cooling system; and generating system outputs based on said model* (Figure 2 "Calculation Efficiency Index and Figure 3 "Calculation Capacity").

5.2 Regarding claim 17, *Rossi* discloses, *wherein said condensing unit parameters include compressor parameters and condenser parameters* (Col. 8 lines 17-67).

5.3 Regarding claim 18, *Rossi* discloses the functional equivalent of, *selecting a flow control device for said cooling system based on said system outputs* (Col. 7 lines 10-15 "select a set of coefficients" and Figure 1 # 14 and Col. 4 lines 9-56).

5.4 Regarding claim 19, *Rossi* discloses, *wherein said flow control device includes one of a capillary tube device and an orifice device* (Col. 4 line3 15-16).

5.5 Regarding claim 20, *Rossi* discloses, *selecting a flow control parameter including a sub-cooling temperature* (Col. 8 lines 32-40) *and a superheat temperature* (Col. 7 lines 53-63).

5.6 Regarding claim 23, *Rossi* discloses, *wherein said properties include refrigerant charge and one of refrigerant superheat temperature and refrigerant sub-cooling temperature* (Col. 8 lines 32-40 and Col. 7 lines 53-63).

5.7 Regarding claim 24, *Rossi* discloses, *further comprising inputting tubing and line heat transfer parameters, wherein said system outputs are further based on said tubing and line heat transfer parameters* (Col. 3 lines 24-34, Col. 4 lines 9-27, Col. 5 lines 46-62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6.   Claims 8, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,701,725 Rossi in view of US Patent 5,687,094 Kagawa.

6.1   Regarding claim 8, *Rossi* does not expressly disclose *generating a list of compressors.*

Kagawa discloses *generating a list of available compressors based on search parameters, selecting a compressor from said list of available compressors and automatically inputting said compressor parameters based on said selected compressor* (Col. 6 lines 26-58).

Rossi and *Kagawa* are analogous art because they are from the same problem solving area of modeling complex systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have used the knowledge based systems of *Kagawa* in combination with the cooling system modeling systems of *Rossi.*

The motivation for doing so would have been to provide an industrial product design verification process where verification experience is accumulated and efficiency is improved *see Col. 1 lines 58-62 Kagawa.*

Therefore, it would have been obvious to combine *Kagawa* with *Rossi* to obtain the invention specified in claims 8, 9 and 10.

6.2 As regards claim 9, *Rossi* discloses, *said search parameters include at least one of a model number, a voltage, a phase, a frequency, a refrigerant type, an application type and a capacity* (Col. 8 lines 15-31).

6.3 As regards claim 10, *Rossi* discloses, *wherein said search parameters include a capacity and a capacity tolerance* (Col. 1 lines 14-63 see also Figure 2 "Capacity Index").

7. Claims 26-31, 33, 34, 37-39 and 41 are rejected as being unpatentable over US Patent 6,701,725 Rossi in view of US Patent 6,990,821 Singh.

7.1 Regarding claim 26, *Rossi* discloses, *a method of computer-based simulation of a cooling system, comprising:* (Figure 1 and the accompanying text and Col. 2 lines 13-24 and Col. 5 lines 16-36 *Rossi* is teaching modeling the performance of a cooling system which teaches the functionality of a simulator) *inputting condenser parameters,* (Figure 3 "Parameter input" Col. 10 lines 27-67 and Col. 11 lines 1-20 and Col. 12 lines 34-41) *evaporator parameters* (Figure 3 "Parameter input" and Col. 15 lines 48-51 and Col. 6 lines 43-44 "…assumptions about the evaporator are made…") *and compressor parameters for said cooling system;* (Figure 3 "Parameter input" and Col. 6 lines 55-67 and Col. 7 lines 1-45), *automatically inputting said air properties into a model of said cooling system; and processing said condenser parameters, said evaporator parameters and said compressor parameters through said model* (Figure 1 and the descriptive text and Figures 2 & 3 and Col. 10-12 describe the process of how the model functions as claimed).

However, *Rossi* does not expressly disclose, *calculating air properties based on a dry bulb temperature,* the examiner notes that *Rossi* does disclose *wet bulb temperature* (Col. 10 lines 16-24).

Singh discloses *calculating air properties based on a dry bulb temperature* (Col. 7 lines 58-67 and Col. 8 lines 1-5).

Rossi and *Singh* are analogous art because they are from the same problem solving area modeling cooling systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have used cooling system modeling systems of *Singh* in combination with the cooling system modeling systems of *Rossi*.

The motivation for doing so would have been to provide a method for monitoring system performance including energy consumption for one or more buildings, *see Singh Col. 1 lines 44-67).*

Therefore it would have been obvious to combine *Singh* with *Rossi* to obtain the invention specified in claims 26-31, 33, 34, 37-39 and 41.

7.2   Regarding claim 27 *Rossi* does not expressly disclose generating a table, however, *Singh* discloses, *wherein said step of calculating said air properties includes generating an air properties table based on said dry bulb temperature* (Figure 8).

7.3   Regarding claim 28 *Rossi* does not expressly disclose generating a graph, however, *Singh* discloses, *wherein said step of calculating said air properties includes generating an air properties graph based on said dry bulb temperature* (Figure 21 & 22).

7.4   Regarding claim 29 *Rossi* discloses the functional equivalent of *selecting a flow control*

device (Col. 7 lines 10-15 "select a set of coefficients" and Figure 1 # 14 and Col. 4 lines 9-56).

7.5   Regarding claim 30 *Rossi* discloses, *wherein said flow control device includes one of a*

capillary tube device and an orifice device (Col. 4 line3 15-16).

7.6   Regarding claim 31 *Rossi* discloses, *further comprising selecting a flow control*

parameter including a sub-cooling temperature (Col. 8 lines 32-40) *and a superheat temperature*

(Col. 7 lines 53-63).

7.7   Regarding claim 33 *Rossi* discloses, *further comprising inputting properties for a*

refrigerant flowing through said cooling system, wherein said output is further based on said

refrigerant properties (Col. 5 lines 62-67 and Col. 6 lines 1-21).

7.8   Regarding claim 34 *Rossi* discloses, *wherein said properties include refrigerant charge*

and one of refrigerant superheat temperature and refrigerant sub-cooling temperature (Col. 8

lines 32-40 and Col. 7 lines 53-63).

7.9   Regarding claim 37 *Rossi* discloses, *wherein said search parameters include at least one*

of a model number, a voltage, a phase, a frequency, a refrigerant type, an application type and a

capacity (Col. 8 lines 15-31).

7.10   Regarding claim 38 *Rossi* discloses, *wherein said search parameters include a capacity*

and a capacity tolerance (Col. 1 lines 14-63 see also Figure 2 "Capacity Index").

7.11   Regarding claim 39 *Rossi* discloses, *further comprising inputting tubing and line heat*

transfer parameters, wherein said output is further based on said tubing and line heat transfer

parameters (Col. 3 lines 24-34, Col. 4 lines 9-27, Col. 5 lines 46-62).

7.12   Regarding claim 41 *Rossi* discloses, *wherein said condenser parameters and said*

compressor parameters are input as air-cooled condensing unit parameters (Col. 8 lines 17-67).

8.   Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Rossi* as modified

by *Singh* as applied to claims 26-31, 33, 34, 37-39 and 41 above, and further in view of US

Patent 5,687,094 Kagawa.

Rossi as modified by *Singh* teaches a modeling a cooling system as recited in claims 26-

31, 33, 34, 37-39 and 41 for the reasons above, differing in that their combined teaching lacks

(claim 36) wherein said step of inputting compressor parameters includes generating a list

of available compressors based on search parameters, selecting a compressor from said list of

available compressors and automatically inputting said compressor parameters based on said

selected compressor.

Kagawa teaches (claim 36) *wherein said step of inputting compressor parameters*

includes generating a list of available compressors based on search parameters, selecting a

compressor from said list of available compressors and automatically inputting said compressor

parameters based on said selected compressor (Col. 6 lines 26-58).

Rossi as modified by *Singh* and *Kagawa* are analogous art because they are all related to

modeling the performance of a cooling system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to utilize the compressor list generation methods of *Kagawa* in the cooling

system modeling methods of *Singh* and *Rossi* because it would be advantageous to provide an

industrial product design verification process where verification experience is accumulated and

efficiency is improved *see Col. 1 lines 58-62 Kagawa.*

9.   Claims 12 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable in view of

US Patent 6,701,725 Rossi.

9.1   Regarding claims 12 and 25, while *Rossi* does not expressly disclose where said output is

effected by parameters based on accumulator parameters, *Rossi* does teach that the output is

effected by parameters relating to other elements of the cooling system, *see Figures 2 & 3 and*

Col. 12 lines 24-50.

        Therefore one of ordinary skill would find it obvious that any changes to the parameters

of any element of the cooling system would affect the output, including the accumulator.

10.   Claims 4, 7, 14, 16 and 21 are rejected under 35 U.S.C. 103 (a) as being unpatentable

over US Patent 6,701,725 Rossi in view of U.S. Patent 4,885,694 Pray.

10.1   Regarding claims 4 and 21, *Rossi* does not expressly disclose, *generating a list of flow*

control devices.

        Pray discloses *generating a list of flow control devices,* (Figure 6 # 320 and more

specifically # 618 and the descriptive text and Col. 13 lines 40-64 more specifically on line 63

"...valve sizing program for generating...").

        Rossi and *Pray* are analogous art because they are both from the similar problem solving

area of modeling complex systems.

        At the time of the invention, it would have been obvious to a person of ordinary skill in

the art to have used the CAD methods of *Pray* with the cooling system methods of *Rossi.*

The suggestion for doing so would have been to automate the design process and decrease the amount of time required for designing building control systems (*Pray Col. 1 lines 24-27*).

Therefore, it would have been obvious to combine *Pray* with *Rossi* to obtain the invention specified in claims 4, 7, 14, 16 and 21.

10.2   Regarding claims 7 and 16, *Rossi* does not expressly disclose *generating a list of available condensers*.

However, *Pray* teaches generating a list of devices used in the design of systems in a building, (Figure 6 # 320 and more specifically # 618 and the descriptive text and Col. 13 lines 40-64 more specifically on line 63 "...valve sizing program for generating...").

It view of the teachings of *Pray* generating a list of available elements of a cooling system using a design tool would be obvious.

10.3   Regarding claim 14, *Rossi* does not expressly disclose *generating a list of available air-cooled condensing units*.

However, *Pray* teaches generating a list of devices used in the design of systems in a building, (Figure 6 # 320 and more specifically # 618 and the descriptive text and Col. 13 lines 40-64 more specifically on line 63 "...valve sizing program for generating...").

It view of the teachings of *Pray* generating a list of available elements of a cooling system using a design tool would be obvious.

11.   Claims 32, 35 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Rossi as modified by *Singh* as applied to claims 26-31, 33, 34, 37-39 and 41 above, and further in

view of U.S. Patent 4,885,694 Pray.

Rossi as modified by *Singh* teaches a modeling a cooling system as recited in claims 26-

31, 33, 34, 37-39 and 41 for the reasons above, differing in that their combined teaching lacks,

(claim 32) "...generating a list of available flow control devices...",

(claim 35) "...generating a list of available condensers...",

(claim 42) "...generating a list of available air-cooled condensing units...".

Pray discloses *generating a list of flow control devices,* (Figure 6 # 320 and more

specifically # 618 and the descriptive text and Col. 13 lines 40-64 more specifically on line 63

"...valve sizing program for generating...") and in view of this teaching of *Pray* it would have

been obvious to further generate a list of *condensing units* as well as a list of *air-cooled*

condensing units.

Rossi as modified by *Singh* and *Pray* are analogous art because they are all from the same

problem solving area of design tools and modeling of complex systems.

Therefore it would have been obvious to one having ordinary skill in the art at the time

the invention to generate a list of available elements of a cooling system using a design tool as

disclosed in the teachings of *Pray.*

12.   Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent

6,701,725 Rossi in view of US Patent 6,990,821 Singh.

12.1   Regarding claim 40, while *Rossi* and *Singh* do not expressly disclose inputting

accumulator parameters, wherein said output is further based on said accumulator parameters,

Rossi does teach that the output is effected by parameters relating to other elements of the

cooling system, *see Figures 2 & 3 and Col. 12 lines 24-50.*

Therefore one of ordinary skill would find it obvious that any changes to the parameters

of any element of the cooling system would affect the output, including the accumulator.

Conclusion

13.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dwin M. Craig whose telephone number is (571) 272-3710. The

examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dwin McTaggart Craig

PAUL RODRIGUEZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100